



DWQMP Drinking Water Service Annual Report 2022-23

Carpentaria Shire Council

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EXECUTIVE SUMMARY

Water suppliers in Queensland are required under the *Water Supply (Safety and Reliability) Act 2008* (the Act) to operate under an approved Drinking Water Quality Management Plan (DWQMP) to protect public health. In addition, the preparation of a DWQMP report per financial year is required by the Act.

This DWQMP report documents the performance of Carpentaria Shire Council (CSC or Council) in implementing the DWQMP for the 2022-23 financial year.

CSC is a registered service provider operating the drinking water scheme for the Karumba and Normanton township under an approved DWQMP. The water supply scheme is comprised of raw water sources (one bore, one weir), a water treatment plant (WTP), pump stations, service reservoirs and a distribution network.

Council has undertaken effective risk management and water quality testing to ensure the supply of safe drinking water. It is noted that one round of trihalomethane (THM) monitoring was not completed as per the monitoring plan, however the monitoring undertaken for this was compliant. Various improvement actions have been undertaken and/or are planned as continual improvement. The improvement actions have been identified through detailed risk assessment to ensure safe quality of drinking water.

The water quality verification results and assessment showed that Council supplied safe quality water to the customers.

One incident was recorded in this reporting period, related to dirty water in the reticulation network and resulted in a small number of complaints. This was an aesthetic issue only and was attributed to higher than normal manganese in the raw water. The incident was responded to efficiently and effectively with no follow-up issues reported.

There were no regulatory DWQMP reviews or audits undertaken within the reporting period.

1. INTRODUCTION

This is the Drinking Water Quality Management Plan (DWQMP) Drinking Water Service Annual Report for Carpentaria Shire Council (CSC or Council) for the financial year of 2022-23.

The DWQMP has been established and is being adhered to protect public health through the identification and minimisation of public health related risks associated with drinking water. CSC is operating under an approved DWQMP, with the approval granted by the Department of Regional Development, Manufacturing and Water.

This Annual Report summarises CSC's drinking water quality performance for the reporting period and progress on the implementation of the Risk Management Improvement Plan (RMIP). The report is made available to customers on Council's website and for inspection upon request at the Council office.

1.1. Scope

The report has been prepared to fulfil the legislative DWQMP reporting requirements set out in the *Water Supply (Safety and Reliability) Act 2008* (the Act).

1.2. Purpose

This annual report aims to:

- be a reference document for the regulator, as well as customers, on Council's performance in relation to the DWQMP reporting obligations under the Act, for the reporting period,
- provide a summary of Council's performance in implementing the DWQMP.

2. SCHEME OPERATED

With the introduction of the Act, water service providers are required to register as a drinking water service provider for the delivery of a drinking water service. Council is a registered drinking water service provider, with the service provider identification (SPID) number as 32.

CSC manages the Normanton-Karumba drinking water supply scheme and distributes treated water to the township of Normanton and Karumba. The water supply scheme is comprised of raw water sources (one bore, one weir), one water treatment plant (WTP), pump stations, service reservoirs and a distribution network.

3. DWQMP IMPLEMENTATION

The implementation of the DWQMP is discussed in this section, and captured in the other sections that follow.

3.1. Risk management

The process of keeping drinking water safe is one of risk management. Through efficient operations and implementation of the DWQMP, Council has ensured effective risk management to assure safe quality of drinking water to our customers.

During the reporting period, Council supplied drinking water that complied with the water quality criteria set in the Australian Drinking Water Guidelines (ADWG).

3.2. Monitoring

CSC maintains comprehensive monitoring programs to ensure that the quality of water supplied to customers is safe. The monitoring programs assist to identify any issue before it becomes a significant water quality incident. The results from the verification monitoring for the reporting period are discussed in Section 4.

Council also undertakes operational monitoring, which includes the planned sequence of measurements and observations to assess and confirm the performance of our preventive or control measures. Measurements are operational parameters which indicate whether processes are functioning effectively.

Quality assurance (QA) is important to guarantee consistently reliable and legally defensible results and ensure customers are provided with the highest quality water.

Council has the following quality assurance systems in place:

- while microbiological samples are tested in-house, quality checks for testing accuracy are undertaken by sending regular samples to the Cairns Regional Council Laboratory, which is a National Association of Testing Authorities (NATA) accredited laboratory,
- operations staff have been appropriately trained to undertake sampling.

3.3. Implementation of Risk Management Improvement Plan

Council maintains a culture of continuous improvement through implementing the RMIP within the DWQMP and making progress towards strengthening the management of the water supply. During the reporting period, Council implemented several key actions, including:

- training package has been reviewed and updated and training has commenced for new staff,
- vermin-proofing of the Normanton ground reservoirs,
- formalization of the reservoir cleaning program.

A detailed status on the Improvement Plan implementation is provided in Appendix A.

4. VERIFICATION MONITORING

This section discusses the compliance with the water quality criteria. Council supplied safe quality drinking water to its customers during the reporting period as discussed in the following tables.

A summary of both external laboratory and in-house verification monitoring show in Table 1. All parameters were compliant as per the ADWG.

Table 1 Drinking water quality performance – verification monitoring

Location	Parameter	Frequency	No. of samples tested	Summary of results			Water quality criteria	No. of non-compliant samples	Comments
				Min	Avg	Max			
Normanton	<i>E. coli</i> in-house (CFU/100mL)	Weekly	60	ND	ND	ND	Not detected	0	Compliant. <i>E. coli</i> rolling average for the reporting period was 100%, at least 98% is required by the <i>Public Health Regulation 2018</i> .
	<i>E. coli</i> external (CFU/100mL)	Monthly	13	ND	ND	ND	Not detected	0	
	Total coliforms (CFU/100mL)	Weekly	58	ND	ND	ND	n/a	n/a	Total coliforms are tested to verify the hygiene of the drinking water supply system.
	Total THMs (µg/L)	6-monthly	1	245	245	245	250 (H)	0	Compliant, one sample missed in the reporting period.
	Free Chlorine (mg/L) - WTP	Daily	364	1.12	1.85	3.05	5 (H)	0	Free chlorine is used for primary disinfection and a residual is provided for the network
	Free Chlorine (mg/L) - Reticulation	Weekly	142	0.08	1.25	2.43	5 (H)	0	Free chlorine is maintained in the network.
	Fluoride (mg/L)	Monthly	365	0.49	0.67	0.88	1.5 (H)	0	Naturally fluoridated to reduce dental caries.
Karumba	<i>E. coli</i> in-house (CFU/100mL)	Monthly	16	ND	ND	ND	Not detected	0	Compliant. <i>E. coli</i> rolling average for the reporting period was 100%, at least 98% is required by the <i>Public Health Regulation 2018</i> .
	<i>E. coli</i> external (CFU/100mL)	Quarterly	4	ND	ND	ND	Not detected	0	
	Total coliforms (CFU/100mL)	Monthly	20	ND	ND	ND	n/a	n/a	Total coliforms are tested to verify the hygiene of the drinking water supply system.

Location	Parameter	Frequency	No. of samples tested	Summary of results			Water quality criteria	No. of non-compliant samples	Comments
				Min	Avg	Max			
	Total THMs (mg/L)	6-monthly	1	220	220	220	250 (H)	0	Compliant, one sample missed in the reporting period.
	Free Chlorine (mg/L) - Reticulation	Weekly	532	0.62	1.36	3.72	5 (H)	0	Free chlorine is maintained in the network.

5. INCIDENTS REPORTED TO THE REGULATOR

There was one incident reported over the reporting period as outlined in Table 2.

Table 2 Incidents Reported for the past financial year

Date reported	Incident Type	What Happened?	What actions were taken?	Incident open or closed?
22/10/2022	Turbidity	Council received a number of dirty water complaints from Normanton residents. However, at no point did it exceed the ADWG aesthetic turbidity limit.	Additional raw water turbidity monitoring, treatment plant optimisation, flushing of the town network and an investigation to identify the cause were undertaken. No issues were identified with water treatment, the issue was likely caused by a higher than usual manganese concentration in the raw water.	Closed

6. CUSTOMER COMPLAINTS

During the reporting period Council received eight (8) dirty water complaints on 22/10/2022. These related to the turbidity incident in the Normanton township outlined in Table 2.

7. DWQMP REVIEW OUTCOMES

No council or regulatory review was required during this reporting period.

8. DWQMP AUDIT FINDINGS

No audit was required during this reporting period.

9. GLOSSARY

Term	Definition
ADWG	Australian Drinking Water Guidelines (2011).
CFU/100mL	Colony forming units per 100 millilitres
CSC/Council	Carpentaria Shire Council
DWQMP	Drinking Water Quality Management Plan.
<i>E. Coli</i>	<i>Escherichia coli</i> , a bacterium which is considered to indicate the presence of faecal contamination and therefore potential health risk.
Incident	Means a non-compliance with water quality criteria (e.g., exceeding an ADWG health guideline value).
mg/L	Milligrams per litre
NATA	National Association of Testing Authorities
NA	Not applicable
ND	None detected
NTU	Nephelometric Turbidity Units
QA	Quality Assurance
RMIP	Risk Management Improvement Plan
SPID	Service Provider Identification
The Act	<i>Water Supply (Safety and Reliability) Act 2008</i>
THMs	Trihalomethanes
WTP	Water Treatment Plant

A. IMPROVEMENT PLAN PROGRESS

The improvement actions relevant for this reporting period are included in Table 3 with relevant commentary on implementation status.

Table 3 Status of open actions from the previous reporting period

Ref	Source/Ref	Component	Improvement Actions	Status	Comments
WQ18	DWQMP Review/Update 2019	Whole of System	Investigate baseline PFAS, PFOS and PFHxS testing utilised a trained sampler. Discussed with Queensland Health. Undertake baseline testing for radiological parameters – gross alpha and gross beta. Include testing of Boron in the annual testing suite.	In progress	Quote for PFA and Radiological testing has been requested and will be included in next year's monitoring plan. Boron testing has been undertaken.
WQ20	DWQMP Review/Update 2019	Whole of System	Investigate installing an online free chlorine instrument near Normanton Sports Ground.	In progress	Investigation completed. But left as in progress. Building to house it is to be constructed.
WQ28	DWQMP Review/Update 2019	Whole of System	Undertake a baseline study of chlorate to determine typical levels using hypochlorite generator.	In progress	Initial analysis has been conducted. Chlorate to be included in the next revision of the monitoring program.
WQ31	DWQMP Minor Update Oct 2021 – Risk Register 2019	Whole of System	Establish a periodic operator competency assessment for the in-house microbiological testing, including sampling.	In progress	Longer term operators have been trained. Newer operators to undertake formal training.
WQ40	DWQMP Review Nov 2021 – Risk Register C-16	Reservoirs	Formalise the reservoir cleaning program, including cleaning schedule.	In progress	Council is participating in a joint exercise with RAPID and QWRAP to clean all six reservoirs.
WQ41	DWQMP Review Nov 2021 – Risk Register C-17	Reservoirs	Vermin proof the whirlybirds for the Normanton ground reservoirs.	Completed	Whirlybirds have been sealed.

Ref	Source/Ref	Component	Improvement Actions	Status	Comments
WQ46	DWQMP Review Nov 2021 – Risk Register WS-5	Whole of System	Review the disinfection procedure to include machinery disinfection prior to use (e.g., excavator).	In progress	-
WQ47	DWQMP Review Nov 2021 – Risk Register WS-10	Whole of System	Investigate obtaining certificate of analysis for chemical batches and maintain as records. Document the chemical QA processes.	In progress	Have commenced obtaining batch certificates.
WQ49	DWQMP Audit 2021	NA	Undertake a scenario exercise for drinking water incident management response.	To start	-
WQ50	DWQMP Audit 2021	NA	Develop a procedure to ensure that all drinking water materials purchased are certified to Australian Standards or are WaterMark approved.	In progress	-
WQ51	DWQMP Audit 2021	NA	Document maintenance program for WTP assets.	In progress	Council is looking to engage an asset manager.